

10/066,202

39. (NEW) A closing device for a valve (14) of a container, the closing device (16) being movable between a first open position to facilitate drainage through the valve and a second closed position which prevents flow through the valve (14), the closing device (16) comprises a housing which houses one of a probe, a measurement detector (27) and a detection apparatus, and the housing prevents the one of the probe, the measurement detector (27) and the detection apparatus from directly contacting contents of the container;

wherein the closing device (16) has an opening (38) formed in a lateral wall of the closing device, the opening (38) provides access to the interior of the housing (30) and allows one of the probe, the measurement detector (27) and the detection apparatus to be inserted into or removed from the interior of the housing without removal of either the valve or the closing device from the container and without altering the valve seal, and the opening (38) is accessible when the closing device (16) is in an operating position inside the valve.

40. (NEW) The closing device according to claim 39, wherein the valve (14) is a drainage valve.

41. (NEW) The closing device according to claim 39, wherein the closing device (16) comprises a shaft (17) supporting an enlarged blocking head (18) at a remote end of the shaft (17).

42. (NEW) The closing device according to claim 39, wherein a piston (21), controlled by an activator (23), displaces the closing device (16) from the open position to the closed position and from the closed position to the open position.

43. (NEW) The closing device according to claim 42, wherein a shaft of the piston (21) of the activator (23) and a shaft (17) of the closing device (16) are interconnected by a coupling element (24).

44. (NEW) The closing device according to claim 43, wherein the coupling element (24) has a generally cylindrical lower portion (25) and a generally conical upper portion (26).

45. (NEW) The closing device according to claim 43, wherein the opening (38) formed in the closing device is located on the coupling element (24).

46. (NEW) The closing device according to claim 39, wherein means temporarily blocks the opening (38) to prevent access thereto.

10/066,202

10/066,202

47. (NEW) The closing device according to claim 39, wherein a door (39) temporarily blocks the opening (38) to prevent access thereto.

48. (NEW) The closing device according to claim 47, wherein a connector block (31) is connected to the door (39) and the connector block (31) is removable with the door (39).

49. (NEW) The closing device according to claim 39, wherein the housing (30) includes a support element (36) for maintaining the one of the probe, the measurement detector (27) and the detection apparatus in one of a measurement position and a detection position.

50. (NEW) The closing device according to claim 49, wherein the support element is a groove (36) formed in an interior lateral wall of the housing (30).

51. (NEW) The closing device according to claim 39, wherein the one of the probe, the measurement detector (27) and the detection apparatus is a contact temperature measurement probe.

52. (NEW) The closing device according to claim 41, wherein the one of the probe, the measurement detector (27) and the detection apparatus is a sensor element (28) located inside the blocking head (18), and, when the sensor element (28) is positioned inside the housing (30), conductive wires (29) of the sensor element (28) pass through the shaft (17) of the closing element (16).

53. (NEW) The closing device according to claim 52, wherein when the one of the probe, the measurement detector (27) and the detection apparatus is positioned inside the housing (30), a remote end of the one of the probe, the measurement detector (27) and the detection apparatus abuts against an upper internal surface of a blocking head (18) of the closing device (16) for one measuring and detecting a temperature inside the container.

54. (NEW) The closing device according to claim 52, wherein the sensor element (28) extends through a flexible casing (33), with the wires (29) of the sensor element (28) pass through an interior of casing, and the casing (33) comprises a compressible spiral (34).

55. (NEW) The closing device according to claim 54, wherein the casing (33) terminates with a contact ring (35).

10/066-202 PM

10/066,202

56. (NEW) The closing device according to claim 50, wherein a contact ring (35) cooperates with the groove (36) of the housing (30) to maintain the one of the probe, the measurement detector (27) and the detection apparatus inside the housing (30) and to ensure that the one of the probe, the measurement detector (27) and the detection apparatus abuts against an upper wall (32) of a blocking head (18) of the closing device by elastic compression of a plurality of spirals (34) on a casing (33).

57. (NEW) A closing device for a valve (14) of a container, the closing device (16) being movable between a first open position to facilitate drainage through the valve and a second closed position which prevents flow through the valve (14), the closing device (16) comprises a housing which houses one of a probe, a measurement detector (27) and a detection apparatus, and the housing prevents the one of the probe, the measurement detector (27) and the detection apparatus from contacting contents of the container;

wherein the closing device (16) comprises a shaft (17) which supports an enlarged blocking head (18) that accommodates a measurement end of the one of the probe, the measurement detector (27) and the detection apparatus, the closing device (16) has an opening (38) formed in a lateral wall of the closing device, the opening (38) provides access to the interior of the housing (30) and allowing the one of the probe, the measurement detector (27) and the detection apparatus to be inserted into or removed from the interior of the housing without removal of either the valve or the closing device from the container and without altering a seal between the enlarged blocking head (18) and a mating valve seat, and the opening (38) is accessible when the closing device (16) is in an operating position inside the valve a housing.

58. (NEW) A closing device for a valve (14) of a container, the closing device (16) being movable between a first open position to facilitate drainage through the valve and a second closed position which prevents flow through the valve (14), the closing device (16) comprises a housing which houses one of a probe, a measurement detector (27) and a detection apparatus, and the housing prevents the one of the probe, the measurement detector (27) and the detection apparatus from contacting contents of the container;

wherein the closing device (16) comprises a shaft (17) which supports an enlarged blocking head (18) that accommodates a measurement end of the one of the

US04-315 PM

10/066,202

probe, the measurement detector (27) and the detection apparatus, the closing device (16) has an opening (38) formed in a lateral wall of the closing device, the opening (38) provides access to the interior of the housing (30) and allowing the one of the probe, the measurement detector (27) and the detection apparatus to be inserted into or removed from the interior of the housing without removal of either the valve or the closing device from the container and without altering a seal between the enlarged blocking head (18) and a mating valve seat, and the opening (38) is accessible when the closing device (16) is in an operating position inside the valve a housing;

a portion of the a shaft (17), which supports an enlarged blocking head (18), is located within an evacuation orifice (20) which facilitate drainage of the contents from the container; and

an activator (23) is provided along a longitudinal axis defined by the shaft (17) for displacing the closing device (16) from the open position to the closed position and from the closed position to the open position.